



Docket No.: 50395-029

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

M. Natsuhara, et al.

Serial No.: 09/342,537

Filed: June 29, 1999

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Group Art Unit: 3723

Examiner: W. Berry

For: CERAMICS BASE PLATE AND METHOD OF PRODUCING THE SAME

APPEAL BRIEF

Commissioner for Patents
Washington, DC 20231

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Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed December 30, 2002.

I. REAL PARTY IN INTEREST

The real party in interest is Sumitomo Electric Industries, LTD.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related Appeal or Interference.

III. STATUS OF CLAIMS

Claims 1 through 8 are pending in this application of which claim 8 stands withdrawn from consideration pursuant to the provisions of 37 C.F.R. §1.132(b). Claims 1 through 7 have been rejected in four separate Office Actions, the most recent Office Action dated November 5, 2002. It is from the multiple rejections of claims 1 through 7 that this Appeal is taken.

IV. STATUS OF AMENDMENTS

No Amendment has been filed subsequent to the issuance of the most recent Office Action dated November 5, 2002.

V. SUMMARY OF THE INVENTION

The present invention addresses and solves problems attendant upon conventional methods of dividing a ceramic sintered base plate into ceramic base plates with a cutting blade (page 1 of the written description of the specification, lines 10 through 16). The problems attendant upon such conventional practices include high processing costs (page 1 of the written description, lines 19 through 23 and page 2 of the written description, lines 8 through 11 and 20 through 22), generation of faults lowering the breaking strength (page 3 of the written description, lines 11 through 13), generation of defects (page 4 of the written description, lines 4 through 9), and reduction in dimensional accuracy (page 4 of the written description, lines 10 through 13.) Another significant problem attendant upon conventional practices is the generation of ammonia if water is employed as a cooling medium in cutting a sintered ceramic base plate made of aluminum nitride (page 3 of the written description of the specification, first full paragraph).

The present invention addresses and solves such problems by providing an elegantly sophisticated method of dividing a ceramics sintered base plate by forming a continuous flaw using a flawing tool from one end to another of a surface thereof and then applying an external force (claim 1). Embodiments include the use of a flawing tool made of a cemented carbide or diamond (claim2) and forming the continuous flaw to a depth of $1/100$ to $1/10$ of the thickness of the ceramics centered base plate (claim4). Advantageously, an embodiment of the present invention avoids the use of a cooling medium (claim 7).

VI. ISSUES

A. The Rejections:

- (1) Claims 1 through 7 stand rejected under the second paragraph of 35 U.S.C. §112;
- (2) Claims 1 through 7 stand rejected under 35 U.S.C. §103 for obviousness predicated upon Boada Sucarrats in view of acknowledged prior art.

B. The Issues Which Arise In This Appeal and Require Resolution by the Honorable Board of Patent Appeals and Interferences (the Board) are:

1. Whether claims 1 through 7 are unpatentable under the second paragraph of 35 U.S.C. §112; and
2. Whether claims 1 through 7 are unpatentable under 35 U.S.C. §103 for obviousness predicated upon Boada Sucarrats in view of the acknowledged prior art.

VII. GROUPING OF CLAIMS

The appealed claims do not stand or fall together as a group. Claims 1 through 3 stand or

fall together as a group. Appellants separately argue the patentability of each of the claims 4, 5, 6 and 7.

VIII. THE ARGUMENT

1. The Rejection of claims 1 through 7 under the second paragraph of 35 U.S.C. §112.

In rejecting claims 1 through 7 the Examiner has decided to ignore consistent judicial precedent. Indeed, the entire rejection under the second paragraph of 35 U.S.C. §112 is expressed in questions and conclusions, ignoring the initial burden of establishing a *prima facie* case.

In imposing the rejection, the Examiner repeatedly ignored the tenet that indefiniteness under the second paragraph of 35 U.S.C. §112 is a question of law. *Zoltek Corp. v. United States*, 48 Fed. Cl. 290, 57 USPQ2d 1257 (Fed. Cl. 2000); *Personalized Media Communications LLC v. U.S. International Trade Commission*, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998); *Tillotson Ltd. V. Walbro Corp.*, 831 F.2d 1033, 4 USPQ2d 1450 (Fed. Cir. 1987); *Orthokinetics, Inc. v. Safety Travel Chairs Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). The Examiner also repeatedly refused to discharge the initial burden of providing a basis in fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art, with the supporting specification in hand, would not be able to reasonably ascertain the scope or protection defined by any rejected claim. *In re Okuzawa*, 537 F.2d 545, 190 USPQ 464 (CCPA 1976). Significantly, consistent judicial precedent holds that reasonable precision in light of the particular subject matter involved is all that is required by the second paragraph of 35 U.S.C. §112. *Zoltek Corp. v. United States, supra.*; *Miles Laboratories,*

Inc. v. Shandon, Inc., 997 F.2d 870, 27 USPQ2d 1123 (Fed. Cir. 1993); *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1988); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986).

Appellants submit that throughout extended prosecution in this case, including a prior Appeal which the Examined ducked, the Examiner made no effort to assess how one having ordinary skill in the art would have interpreted the claims in light of and consistent with the supporting specification. *Zoltek Corp. v. United States*, *supra*; *Miles Laboratories, Inc. v. Shandon, Inc.*, *supra*; *Budde v. Harley-Davidson, Inc.*, ___ F.3d ___, 58 USPQ2d 1801 (Fed. Cir. 2001).

Clearly, the Examiner did not discharge the initial burden of providing a basis in fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art would not be able to ascertain the scope of protection defined by the claims, when reasonably interpreted in light of and consistent with the supporting specification. Merely posing questions falls far short of discharging the initial burden of providing a basis to support the asserted definiteness under the second paragraph of 35 U.S.C. §112. Appellants have exercised their right to claim what **they** regard as their invention. *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979); *In re Borkowski*, 422 F.2d 904, 164 USPQ 642 (CCPA 1970).

The issue is not one of English grammar. The issue is not what the Examiner may view as "vague, indefinite, and/or awkwardly and confusing worded" (page 2 of the November 5, 2002 Office Action, first enumerated section, lines 4 and 5). Indeed, in the November 5, 2002 Office Action, the Examiner does not even attempt **to explain** the rejection, thereby denying Appellants their right under **Procedural Due Process of Law**. *In re Mullin*, 481 F.2d 1333, 179 USPQ 97 (CCPA 1973); *In re Frilette*, 423 F.2d 1397, 165 USPQ 259 (CCPA 1970); *In re Borkowski*, 422

F.2d 904, 164 USPQ 642 (CCPA 1970).

Based upon the forgoing, Appellants submit that the imposed rejection of claims 1 through 7 under the second paragraph of 35 U.S.C. §112 should be summarily reversed for failure to state a prima facie case. At any rate, in an abundance of caution, Appellants will address what appears to be the Examiner's specific basis underpinning the rejection.

Claim 1 is directed to a **method** comprising the **manipulative step** of "forming a continuous flaw" by "using a flawing tool". Appellants have difficulty conceiving of one having ordinary skill in the art, out in the real world, who would be so confused by the claim language as not to understand the claimed invention. Indeed, the Examiner did not even contend that one having ordinary skill would be confused. The Examiner asks questions but does not provide any basis to support the legal conclusion that the recited manipulative step of forming a continuous flaw "using a flawing tool" runs afoul of the second paragraph of 35 U.S.C. §112. Suffice it to say, one having ordinary skill in the art would understand that the manipulative step of forming a continuous flaw is conducted with a flawing tool.

Claim 1 also requires the manipulative step of **dividing** the ceramic sintered base plate **by applying an external force**. Appellants have difficulty conceiving of one having ordinary skill in the art who would not be able to understand that the claimed invention involves the application of an external force to divide the ceramic sintered base plate. The Examiner's questions do not discharge the judicially imposed burden of explaining **why** the claims run afoul the second paragraph of 35 U.S.C. §112. *In re Frilette, supra.*

As to the Examiner's comments with respect to claim 7, the Examiner has repeatedly conspicuously declined to accept Appellants' invitation to cite a statutory or judicial basis for concluding that a negative limitation, **per se**, renders a claim indefinite. Applicants have the right to define what **they** regard as **their** invention. *In re Ehreich, supra; In re Borkowski, supra.* Negative limitations, per se, do not render a claimed invention indefinite. *In re Marosi, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983).* Appellants are free to define what they regard as their invention. *In re Ehrreich, supra; In re Borkowski, supra.*

Based upon the foregoing, Appellants submit that a prima facie basis to deny patentability to the claimed invention under the second paragraph of 35 U.S.C. §112 has not been established. Appellants, therefore, submit that the imposed rejection of claims 1 through 7 under the second paragraph of 35 U.S.C. §112 is legally erroneous.

2. The Rejection of Claims 1 through 7 under 35 U.S.C. §103 for obviousness predicated upon Boada Sucarrats in view of the acknowledged prior art.

In the previous Appeal Brief of December 31, 2001, it was pointed out, and the Examiner does not now contend otherwise, that Boada Sucarrats neither discloses nor suggests a method which involves a sintered base plate. Further, it was argued that the Examiner did not factually establish, and the Examiner does not now contend otherwise, that the tool disclosed by Boada Sucarrats is even capable of scoring a ceramic sintered base plate. Indeed, Boada Sucarrats addresses ceramic pieces such as plates and tiles (column 1, lines 7 and 8). No mention is made of any ceramic sintered base plate, and the Examiner has abandoned his previous theory that the general reference to a ceramic would specifically include a sintered base plate.

In the prior Appeal Brief of December 31, 2001, it was also argued that Boada Sucarrats neither addresses nor solves the problems addressed and solved by the claimed invention which occur upon attempting to divide a ceramic sintered base plate. The Examiner does not now contend otherwise. In short, the primary reference to Boada Sucarrats merely discloses the idea of providing a scoring line to brake a plate or tile.

In apparent recognition of the shortcomings of Boada Sucarrats, the Examiner seizes on what he considers the acknowledged prior art which is basically Appellants' identification of a **problem** attendant upon conventional practices in using a cutting tool to divide a ceramics sintered base plate. From that **problem**, the Examiner jumps to the legal conclusion that the claimed invention as a whole would have been obvious because Boada Sucarrats scores plates and tiles while being **completely oblivious to the particular problems addressed and solved by the claimed invention attendant upon conventional practices of dividing ceramics sintered base plates**. Appellants submit that the Examiner's rejection is clearly legally erroneous for several reasons.

There is no Motivation

The Examiner is charged with the initial burden of making a "thorough and searching" factual inquiry and, based upon that factual inquiry, explaining **why** one having ordinary skill in the art would have been realistically impelled to modify particular prior art, in this case the methodology of Boada Sucarrats, to arrive at the claimed invention. *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). Indeed, as held by the Honorable Court of Appeals for the Federal Circuit in *Teleflex Inc. v. Ficosa North America Corp.*, ___ F.3d ___, 63 USPQ2d 1374 1387 (Fed. Cir. 2002):

The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence.

In applying these legal tenets, the exigencies of this case, Appellants submit that the Examiner did not establish the requisite realistic motivation. The Examiner merely points to Boada Sucarrats, points to the problem addressed and solved by the claimed invention, and then boldly concludes, without identifying any particular facts:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Boada Sucarrats to include the diamond flawing tool and aluminum nitride sintered base plate as taught by ADS for the purpose of substituting one combination of work piece and tool for another. (ultimate paragraph on page 3 of the November 5, 2002 Final Office Action).

"For the purpose of substituting one combination of workpiece and tool for another." Appellants are at a lost to understand the factual, technological or legal basis for the Examiner's conclusion. Suffice to say, the Examiner has failed to identify any facts to support his "purpose of substituting one combination of workpiece and tool for another." The Examiner's statement is nothing more than a judicially condemned unsupported **generalization**. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000) *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999); *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

Appellants would question: Where is the "thorough and searching" factual inquiry? *In re Lee, supra*. Appellants would question: Where is the "clear and particular" showing of motivation "supported by actual evidence"? *Teleflex Inc. v. Ficosa North America Corp. supra*. Manifestly, the Examiner has improperly looked to Appellants' disclosure. However, Appellants' disclosure is forbidden territory upon which the Examiner may excavate for the requisite realistic

motivational element. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985).

One Having Ordinary Skill in the Art follows Conventional Wisdom

The legal impropriety of the Examiner's rejection is underscored by the Examiner's attempt to surgically remove from the problem disclosed in Appellants' disclosure so much as suits him. What the Examiner has apparently left behind is the fact that conventional wisdom in this art comprises completely cutting through a ceramic sintered base plate, as well as dividing sintered base plate by supplying an external force after half cutting the base plate. The Examiner has never and does not now dispute such conventional practices. *In re Clinton*, 527 F.2d 1226, 188 USPQ 365 (CCPA 1976). And the Examiner apparently recognizes a **difference** between the formation of a continuous flaw and such prior art techniques. What the Examiner has **ignored** is that one having ordinary skill in the art must be presumed to follow conventional wisdom. *Ecolochem Inc. v. Southern California Edison, Co.*, *supra*; *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 227 USPQ 293 (Fed. Cir. 1985). The Examiner has provided absolutely no factual basis to support the conclusion that one having ordinary skill in the art would have been realistically led to **deviate** from such conventional practices. *Teleflex Inc. v. Ficosa North America Corp.*, *supra*; *In re Lee*, *supra*.

The Dependent Claims

Appellants separately argue the patentability of claims 4, 5 and 6. The Examiner has made no "clear and particular" factual findings as to claims 4 through 6. *Teleflex Inc. v. Ficosa North America Corp.*, *supra*. Accordingly, the rejection of these claims should be reversed for failure to state a prima facie case.

Appellants would note that in the ultimate sentence on page 3 of the November 5, 2002

Office Action, the Examiner offers the following:

The specific depth of the flaw would have been obvious to one having ordinary skill in the art at the time the invention was made, since it is within the general skill of a work in the art to select depth on the basis of its suitability for the user's preference as a matter of obvious design choice.

The above exposition was apparently intended to relate to claim 4, but is without any factual basis. The Examiner has failed to identify wherein the applied prior art expresses any recognition that the **depth of the flaw is an art-recognized result effect variable**, much less in a ceramics sintered base plate. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *In re Yates*, 663 F.2d 1054, 211 USPQ 1149 (CCPA 1981); *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). As to the Examiner's "obvious design choice" rubric, Appellants would rely upon: *In re Chu*, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995); *In re Gal*, 980 F.2d 717, 25 USPQ2d 1076 (Fed. Cir. 1992) and *In re Bezombes*, 420 F.2d 1070, 164 USPQ 387 (CCPA 1970).

Indicium of Nonobvious

The **problem** addressed and solved by a claimed invention is entitled to consideration attendant the **nonobviousness** issue. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989); *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975). It is **without dispute on this record** that Appellants have addressed and solved problems attendant upon conventional practices in dividing ceramic sintered base plates, such as high processing costs,

generation of flaws lowering the breaking strength, the generation of a defects, reduction in dimensional accuracy and generation of ammonia. It is also **without dispute** on this record that these problems are not even blips on the radar screen of Boada Sucarrats. Under such circumstances, the problem addressed and solved by the present invention can not be ignored as the Examiner has done.

Conclusion

Based upon the foregoing, Appellants submit that the Examiner did not establish a prima facie basis to deny patentability to the claimed invention for lack of the requisite realistic motivation. Moreover, upon giving due consideration to the problem addressed and solved by the claimed invention, the conclusion appears inescapable that one having ordinary skill in the art would **not** have found the claimed invention **as a whole** obvious within the meaning of 35 U.S.C. §103. *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984). Appellants, therefore, submit that the imposed rejection of claims 1 through 7 under 35 U.S.C. 103 for obviousness predicated upon Boada Sucarrats in view of the acknowledged prior art is factually and legally erroneous.

IX. PRAYER FOR RELIEF

Based upon the foregoing, Appellants submit that the Examiner's rejections under the second paragraph of 35 U.S.C. §112 and 35 U.S.C. §103 are erroneous. Appellants, therefore, respectfully solicit the Honorable Board to reverse each of the Examiner's rejections.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is

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hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

A handwritten signature in black ink, appearing to read 'A. J. Steiner', written over the printed name.

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APPENDIX

1. A method of producing ceramics base plates, which method comprises:
forming a continuous flaw on at least one surface of a ceramics sintered base plate from end to end with a flawing tool; and
dividing the ceramics sintered base plate along the flaw by applying an external force.
2. A method of producing ceramics base plates as claimed in claim 1, wherein a blade edge portion of the flawing tool is made of a cemented carbide or diamond.
3. A method or producing ceramics base plates as claimed in claim 2, wherein the blade edge portion of the flawing tool is made of diamond.
4. A method of producing ceramics base plates as claimed in claim 2, comprising forming the continuous flaw to a depth of from 1/100 to 1/10 of the thickness of the ceramics sintered base plate.
5. A method of producing ceramics base plates as claimed in claim 1, wherein Vickers hardness of the ceramics sintered base plate is 1,500 Hv or lower.
6. A method of producing ceramics base plates as claimed in claim 1, wherein the ceramics sintered base plate is an aluminum nitride sintered base plate.

7. A method of producing ceramics base plates as claimed in claim 1, comprising forming the flaw on the surface of the ceramics sintered base plate and at dividing the ceramics sintered base plate without employing a cooling medium.